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SHORT REPORT

Stent-graft Repair of Proximal Splenic Artery Aneurysm

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Key Words: Stent graft; Splenic artery aneurysm; Endovascular repair.

Introduction

Although rare, splenic artery aneurysms (SAA) account for 60% of visceral artery aneurysms. Prevalence varies from 0.08 to 10% in autopsy studies.[1] Most SAAs do not cause symptoms and are diagnosed incidentally on ultrasound or CT scans.[1,2] They have a life-time risk of rupture of 2-10% with an associated mortality of up to 25%.[3] SAAs measuring more than 2 cm, symptomatic, enlarging, in women of childbearing age or patients with portal hypertension are associated with an increased risk of rupture.[1] True aneurysms are associated with portal hypertension, pregnancy, essential hypertension and other conditions. Pseudoaneurysms are caused by trauma and pancreatitis.[2] Active management is mostly by surgery or endovascular coil embolisation.[1] We describe the feasibility of endovascular exclusion of SAA using a stent-graft.

Case Report

A 68-year-old male patient was incidentally found to have a visceral aneurysm on abdominal ultrasound scan when investigated for haemo-chromatosis. CT angiography demonstrated a 3 cm SAA. A digital subtraction angiogram (DSA) depicted the lesion in the proximal splenic artery, arising 2 cm distal to the origin of the hepatic artery. Proximal and distal splenic artery (SA) diameters were both 6 mm (Fig. 1). An attempt to embolise the distal SA was aborted when a coil started to straighten the catheter at the first tight curve of the SA, and the catheter retracted proximally risking a misplacement of coils, i.e. proximally to the origin of the SAA.

A combined surgical and radiological approach for endovascular exclusion with a 9F 8 × 70 mm Wallgraft covered stent (Boston Scientific International) was scheduled at a separate session. As the groin arteries were heavily calcified surgical exposure of the right common femoral artery was undertaken to facilitate insertion of a 10F sheath for catheterisation of the SA distal to the aneurysm. An Amplatz superstiff 0.035″ guidewire was exchanged. The passage of the superstiff wire straightened the tortuous SA into a gentle curve. Two wall-graft stents were easily exchanged over the superstiff wire and successfully excluded the SAA, preserving the splenic arterial flow (Fig. 2).

The patient went home at 48 h with no complications and was well at four months follow-up. Spiral CT at 2 days and 6 months following the procedure confirmed successful exclusion of the SAA and patent SA.

Discussion

Traditionally, the management of SAAs comprises surgical repair/ligation with or without splenectomy. Transcatheter embolisation has gained popularity as it has lower rates of complications than surgery. Nevertheless, embolisation carries the risk of splenic

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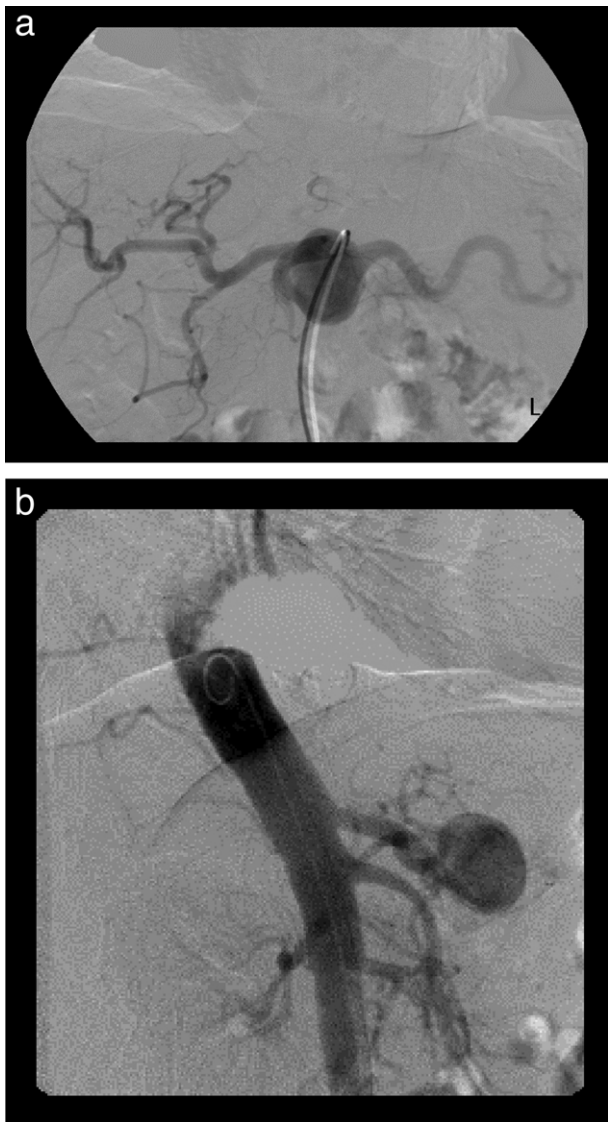

Fig. 1. (a) AP view of angiogram showing the proximal SAA and hepatic artery. (b) Lateral view angiogram of the aneurysm.

infarction, abscess formation and adjacent visceral embolism.[1] The use of stent-grafts in the management of SAAs has been described recently in three cases where the aneurysms were located in the middle or distal segment of the artery.[3–5] We recommend the use of endovascular stent-grafts to exclude wide-neck or proximal SAAs, where embolisation carries a high risk of proximal coil misplacement/migration.

For the same reason we used two overlapping stent-grafts to ensure a safe deployment within the proximal SA. Although deployment of a single stent-graft could be considered, the prediction of the proximal landing zone, as in our case, could be further compromised by a tortuous SA anatomy.

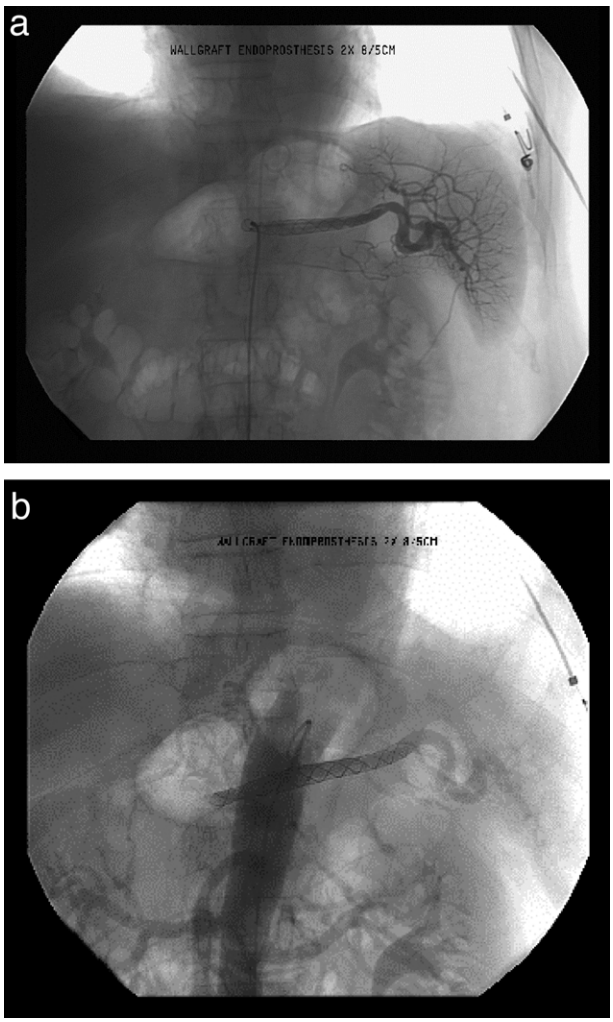

Fig. 2. (a) Completion angiogram after placement of two stent-grafts showing exclusion of the aneurysm and preservation of the blood flow to the spleen. (b) Aortogram showing complete exclusion of the aneurysm.

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